comparing the measured temperature to a target temperature;

heating the plasma processing chamber by heating a plurality of thermal control blocks that include at least a heater element and a cooling element arranged around the sides of the plasma processing chamber such that the thermal control blocks are thermally coupled to the plasma processing chamber; and

cooling the plasma processing chamber by actively cooling the plurality of thermal control blocks so that the cooling is provided by the cooling element through the heating element.

(Twice amended) 26. A method as recited in claim 23 ~~[25]~~, wherein the thermal control blocks further include a thermal break element coupled between the heater element and the cooling element.

(Amended) 32. A method as recited in claim 23, wherein the thermal control blocks further include notches configured to prevent RF energy from coupling with the thermal control blocks.

(Amended) 33. A method for providing temperature control to a plasma processing chamber of a plasma processing apparatus, said method comprising:

directly or indirectly measuring temperature internal to the plasma processing chamber;

comparing the measured temperature to a target temperature;

providing a thermal control block that is thermally coupled to the plasma processing chamber, said thermal control block having a heating element and a cooling element with a thermal break element coupled between the heater element and the cooling element;

heating the plasma processing chamber by heating the thermal control block that is thermally coupled to the plasma processing chamber; and

cooling the plasma processing chamber by actively cooling the thermal control block so that the cooling is provided by the cooling element through the heating element.